

## SEQUENCE LISTING

&lt;110&gt; Toolgen Inc.

&lt;120&gt; Regulatory Zinc Finger Proteins

&lt;130&gt; PCA31172/TGI

&lt;150&gt; US 60/431,892

&lt;151&gt; 2002-12-09

&lt;160&gt; 129

&lt;170&gt; PatentIn version 3.2

&lt;210&gt; 1

&lt;211&gt; 23

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1

Tyr	Lys	Cys	Lys	Gln	Cys	Gly	Lys	Ala	Phe	Gly	Cys	Pro	Ser	Asn	Leu
1				5					10					15	

Arg	Arg	His	Gly	Arg	Thr	His
						20

&lt;210&gt; 2

&lt;211&gt; 23

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2

Tyr	Ser	Cys	Gly	Ile	Cys	Gly	Lys	Ser	Phe	Ser	Asp	Ser	Ser	Ala	Lys
1				5					10					15	

Arg	Arg	His	Cys	Ile	Leu	His
						20

&lt;210&gt; 3

&lt;211&gt; 23

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 3

Tyr Thr Cys Ser Asp Cys Gly Lys Ala Phe Arg Asp Lys Ser Cys Leu  
1 5 10 15

Asn Arg His Arg Arg Thr His  
20

<210> 4  
<211> 23  
<212> PRT  
<213> Homo sapiens

<400> 4

Tyr Lys Cys Gly Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu  
1 5 10 15

Thr Arg His Gln Lys Ile His  
20

<210> 5  
<211> 23  
<212> PRT  
<213> Homo sapiens

<400> 5

Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu  
1 5 10 15

Thr Thr His Lys Ile Ile His  
20

<210> 6  
<211> 23  
<212> PRT  
<213> Homo sapiens

<400> 6

Tyr Glu Cys Glu Lys Cys Gly Lys Ala Phe Asn Gln Ser Ser Asn Leu  
1 5 10 15

Thr Arg His Lys Lys Ser His  
20

<210> 7  
 <211> 23  
 <212> PRT  
 <213> Homo sapiens

<400> 7

Tyr Val Cys Ser Lys Cys Gly Lys Ala Phe Thr Gln Ser Ser Asn Leu  
 1 5 10 15

Thr Val His Gln Lys Ile His  
 20

<210> 8  
 <211> 23  
 <212> PRT  
 <213> Homo sapiens

<400> 8

Tyr Lys Cys Pro Asp Cys Gly Lys Ser Phe Ser Gln Ser Ser Ser Leu  
 1 5 10 15

Ile Arg His Gln Arg Thr His  
 20

<210> 9  
 <211> 25  
 <212> PRT  
 <213> Homo sapiens

<400> 9

Tyr Val Cys Asp Val Glu Gly Cys Thr Trp Lys Phe Ala Arg Ser Asp  
 1 5 10 15

Glu Leu Asn Arg His Lys Lys Arg His  
 20 25

<210> 10  
 <211> 23  
 <212> PRT  
 <213> Homo sapiens

<400> 10

Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu  
 1 5 10 15

Lys Thr His Thr Arg Thr His  
 20

<210> 11  
 <211> 23  
 <212> PRT  
 <213> Homo sapiens

<400> 11

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu  
 1 5 10 15

Thr Arg His Gln Arg Ile His  
 20

<210> 12  
 <211> 23  
 <212> PRT  
 <213> Homo sapiens

<400> 12

Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser Arg Lys Ser Asn Leu  
 1 5 10 15

Ile Arg His Gln Arg Thr His  
 20

<210> 13  
 <211> 23  
 <212> PRT  
 <213> Homo sapiens

<400> 13

Tyr Glu Cys Asp His Cys Gly Lys Ala Phe Ser Val Ser Ser Asn Leu  
 1 5 10 15

Asn Val His Arg Arg Ile His  
 20

<210> 14  
<211> 23  
<212> PRT  
<213> Homo sapiens

<400> 14

Tyr Thr Cys Lys Gln Cys Gly Lys Ala Phe Ser Val Ser Ser Ser Leu  
1 5 10 15

Arg Arg His Glu Thr Thr His  
20

<210> 15  
<211> 23  
<212> PRT  
<213> Homo sapiens

<400> 15

Tyr Glu Cys Asn Tyr Cys Gly Lys Thr Phe Ser Val Ser Ser Thr Leu  
1 5 10 15

Ile Arg His Gln Arg Ile His  
20

<210> 16  
<211> 23  
<212> PRT  
<213> Homo sapiens

<400> 16

Tyr Arg Cys Glu Glu Cys Gly Lys Ala Phe Arg Trp Pro Ser Asn Leu  
1 5 10 15

Thr Arg His Lys Arg Ile His  
20

<210> 17  
<211> 23  
<212> PRT  
<213> Homo sapiens

<400> 17

Tyr Glu Cys Asp His Cys Gly Lys Ser Phe Ser Gln Ser Ser His Leu  
 1 5 10 15

Asn Val His Lys Arg Thr His  
 20

<210> 18  
 <211> 23  
 <212> PRT  
 <213> Homo sapiens

<400> 18

Phe Leu Cys Gln Tyr Cys Ala Gln Arg Phe Gly Arg Lys Asp His Leu  
 1 5 10 15

Thr Arg His Met Lys Lys Ser  
 20

<210> 19  
 <211> 24  
 <212> PRT  
 <213> Artificial

<220>  
 <223> Artificial zinc finger domain

<400> 19

Tyr Arg Cys Lys Tyr Cys Asp Arg Ser Phe Ser Asp Ser Ser Asn Leu  
 1 5 10 15

Gln Arg His Val Arg Asn Ile His  
 20

<210> 20  
 <211> 83  
 <212> PRT  
 <213> Artificial

<220>  
 <223> artificial zinc finger protein

<400> 20

Tyr Lys Cys Gly Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu  
 1 5 10 15

Thr Arg His Gln Lys Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys  
 20 25 30

Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr  
 35 40 45

Arg Thr His Thr Gly Glu Lys Pro Tyr Ile Cys Arg Lys Cys Gly Arg  
 50 55 60

Gly Phe Ser Arg Lys Ser Asn Leu Ile Arg His Gln Arg Thr His Thr  
 65 70 75 80

Gly Glu Lys

<210> 21  
 <211> 83  
 <212> PRT  
 <213> Artificial

<220>  
 <223> artificial zinc finger protein

<400> 21

Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu  
 1 5 10 15

Thr Thr His Lys Ile Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Met  
 20 25 30

Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln  
 35 40 45

Arg Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg  
 50 55 60

Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr  
 65 70 75 80

Gly Glu Lys

<210> 22  
 <211> 83  
 <212> PRT  
 <213> Artificial

&lt;220&gt;

&lt;223&gt; artificial zinc finger protein

&lt;400&gt; 22

Tyr Lys Cys Gly Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu  
 1 5 10 15

Thr Arg His Gln Lys Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys  
 20 25 30

Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr  
 35 40 45

Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys  
 50 55 60

Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr  
 65 70 75 80

Gly Glu Lys

&lt;210&gt; 23

&lt;211&gt; 83

&lt;212&gt; PRT

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; artificial zinc finger protein

&lt;400&gt; 23

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu  
 1 5 10 15

Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys  
 20 25 30

Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr  
 35 40 45

Arg Thr His Thr Gly Glu Lys Pro Tyr Glu Cys Asp His Cys Gly Lys  
 50 55 60

Ala Phe Ser Val Ser Ser Asn Leu Asn Val His Arg Arg Ile His Thr  
 65 70 75 80

Gly Glu Lys

<210> 24  
 <211> 84  
 <212> PRT  
 <213> Artificial

<220>  
 <223> artificial zinc finger protein

<400> 24

Tyr Glu Cys Asp His Cys Gly Lys Ser Phe Ser Gln Ser Ser His Leu  
 1 5 10 15

Asn Val His Lys Arg Thr His Thr Gly Glu Lys Pro Phe Leu Cys Gln  
 20 25 30

Tyr Cys Ala Gln Arg Phe Gly Arg Lys Asp His Leu Thr Arg His Met  
 35 40 45

Lys Lys Ser His Thr Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln  
 50 55 60

Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His  
 65 70 75 80

Thr Gly Glu Lys

<210> 25  
 <211> 83  
 <212> PRT  
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<220>  
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<400> 25

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu  
 1 5 10 15

Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys  
 20 25 30

Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr  
 35 40 45

Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys  
 50 55 60

Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr  
 65 70 75 80

Gly Glu Lys

<210> 26  
 <211> 84  
 <212> PRT  
 <213> Artificial

<220>  
 <223> artificial zinc finger protein

<400> 26

Tyr Lys Cys Lys Gln Cys Gly Lys Ala Phe Gly Cys Pro Ser Asn Leu  
 1 5 10 15

Arg Arg His Gly Arg Thr His Thr Gly Glu Lys Pro Tyr Arg Cys Glu  
 20 25 30

Glu Cys Gly Lys Ala Phe Arg Trp Pro Ser Asn Leu Thr Arg His Lys  
 35 40 45

Arg Ile His Thr Gly Glu Lys Pro Phe Leu Cys Gln Tyr Cys Ala Gln  
 50 55 60

Arg Phe Gly Arg Lys Asp His Leu Thr Arg His Met Lys Lys Ser His  
 65 70 75 80

Thr Gly Glu Lys

<210> 27  
 <211> 83  
 <212> PRT  
 <213> Artificial

<220>  
 <223> artificial zinc finger protein

<400> 27

Tyr Lys Cys Lys Gln Cys Gly Lys Ala Phe Gly Cys Pro Ser Asn Leu  
 1 5 10 15

Arg Arg His Gly Arg Thr His Thr Gly Glu Lys Pro Tyr Arg Cys Glu  
 20 25 30

Glu Cys Gly Lys Ala Phe Arg Trp Pro Ser Asn Leu Thr Arg His Lys  
 35 40 45

Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys  
 50 55 60

Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr  
 65 70 75 80

Gly Glu Lys

<210> 28

<211> 85

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 28

Tyr Arg Cys Lys Tyr Cys Asp Arg Ser Phe Ser Asp Ser Ser Asn Leu  
 1 5 10 15

Gln Arg His Val Arg Asn Ile His Thr Gly Glu Lys Pro Tyr Arg Cys  
 20 25 30

Glu Glu Cys Gly Lys Ala Phe Arg Trp Pro Ser Asn Leu Thr Arg His  
 35 40 45

Lys Arg Ile His Thr Gly Glu Lys Pro Phe Leu Cys Gln Tyr Cys Ala  
 50 55 60

Gln Arg Phe Gly Arg Lys Asp His Leu Thr Arg His Met Lys Lys Ser  
 65 70 75 80

His Thr Gly Glu Lys  
 85

<210> 29

<211> 84

<212> PRT

<213> Artificial

&lt;220&gt;

&lt;223&gt; artificial zinc finger protein

&lt;400&gt; 29

Tyr Arg Cys Lys Tyr Cys Asp Arg Ser Phe Ser Asp Ser Ser Asn Leu  
 1 5 10 15

Gln Arg His Val Arg Asn Ile His Thr Gly Glu Lys Pro Tyr Arg Cys  
 20 25 30

Glu Glu Cys Gly Lys Ala Phe Arg Trp Pro Ser Asn Leu Thr Arg His  
 35 40 45

Lys Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly  
 50 55 60

Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln Arg Ile His  
 65 70 75 80

Thr Gly Glu Lys

&lt;210&gt; 30

&lt;211&gt; 111

&lt;212&gt; PRT

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; artificial zinc finger protein

&lt;400&gt; 30

Tyr Ser Cys Gly Ile Cys Gly Lys Ser Phe Ser Asp Ser Ser Ala Lys  
 1 5 10 15

Arg Arg His Cys Ile Leu His Thr Gly Glu Lys Pro Tyr Ile Cys Arg  
 20 25 30

Lys Cys Gly Arg Gly Phe Ser Arg Lys Ser Asn Leu Ile Arg His Gln  
 35 40 45

Arg Thr His Thr Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg  
 50 55 60

Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr  
 65 70 75 80

Gly Glu Lys Pro Tyr Thr Cys Lys Gln Cys Gly Lys Ala Phe Ser Val  
                             85                            90                            95

Ser Ser Ser Leu Arg Arg His Glu Thr Thr His Thr Gly Glu Lys  
                             100                            105                            110

<210> 31  
 <211> 111  
 <212> PRT  
 <213> Artificial

<220>  
 <223> artificial zinc finger protein

<400> 31

Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu  
 1                            5                            10                            15

Thr Thr His Lys Ile Ile His Thr Gly Glu Lys Pro Tyr Ser Cys Gly  
                             20                            25                            30

Ile Cys Gly Lys Ser Phe Ser Asp Ser Ser Ala Lys Arg Arg His Cys  
                             35                            40                            45

Ile Leu His Thr Gly Glu Lys Pro Tyr Ile Cys Arg Lys Cys Gly Arg  
                             50                            55                            60

Gly Phe Ser Arg Lys Ser Asn Leu Ile Arg His Gln Arg Thr His Thr  
 65                            70                            75                            80

Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg  
                             85                            90                            95

Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr Gly Glu Lys  
                             100                            105                            110

<210> 32  
 <211> 111  
 <212> PRT  
 <213> Artificial

<220>  
 <223> artificial zinc finger protein

<400> 32

Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu  
1 5 10 15

Lys Thr His Thr Arg Thr His Thr Gly Glu Lys Pro Tyr Glu Cys Asp  
20 25 30

His Cys Gly Lys Ala Phe Ser Val Ser Ser Asn Leu Asn Val His Arg  
35 40 45

Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Glu Glu Cys Gly Lys  
50 55 60

Ala Phe Arg Gln Ser Ser His Leu Thr Thr His Lys Ile Ile His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Ser Cys Gly Ile Cys Gly Lys Ser Phe Ser Asp  
85 90 95

Ser Ser Ala Lys Arg Arg His Cys Ile Leu His Thr Gly Glu Lys  
100 105 110

<210> 33

<211> 111

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 33

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu  
1 5 10 15

Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Thr Cys Ser  
20 25 30

Asp Cys Gly Lys Ala Phe Arg Asp Lys Ser Cys Leu Asn Arg His Arg  
35 40 45

Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Glu Glu Cys Gly Lys  
50 55 60

Ala Phe Arg Gln Ser Ser His Leu Thr Thr His Lys Ile Ile His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Thr Cys Ser Asp Cys Gly Lys Ala Phe Arg Asp  
85 90 95

Lys Ser Cys Leu Asn Arg His Arg Arg Thr His Thr Gly Glu Lys  
 100 105 110

<210> 34  
 <211> 111  
 <212> PRT  
 <213> Artificial

<220>  
 <223> artificial zinc finger protein

<400> 34

Tyr Glu Cys Glu Lys Cys Gly Lys Ala Phe Asn Gln Ser Ser Asn Leu  
 1 5 10 15

Thr Arg His Lys Lys Ser His Thr Gly Glu Lys Pro Tyr Lys Cys Gly  
 20 25 30

Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu Thr Arg His Gln  
 35 40 45

Lys Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg  
 50 55 60

Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr  
 65 70 75 80

Gly Glu Lys Pro Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser Arg  
 85 90 95

Lys Ser Asn Leu Ile Arg His Gln Arg Thr His Thr Gly Glu Lys  
 100 105 110

<210> 35  
 <211> 111  
 <212> PRT  
 <213> Artificial

<220>  
 <223> artificial zinc finger protein

<400> 35

Tyr Lys Cys Lys Gln Cys Gly Lys Ala Phe Gly Cys Pro Ser Asn Leu  
 1 5 10 15

Arg Arg His Gly Arg Thr His Thr Gly Glu Lys Pro Phe Gln Cys Lys  
20 25 30

Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr  
35 40 45

Arg Thr His Thr Gly Glu Lys Pro Tyr Ile Cys Arg Lys Cys Gly Arg  
50 55 60

Gly Phe Ser Arg Lys Ser Asn Leu Ile Arg His Gln Arg Thr His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg  
85 90 95

Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr Gly Glu Lys  
100 105 110

<210> 36

<211> 113

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 36

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu  
1 5 10 15

Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Glu  
20 25 30

Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu Thr Thr His Lys  
35 40 45

Ile Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys  
50 55 60

Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Val Cys Asp Val Glu Gly Cys Thr Trp Lys Phe  
85 90 95

Ala Arg Ser Asp Glu Leu Asn Arg His Lys Lys Arg His Thr Gly Glu  
100 105 110

Lys

&lt;210&gt; 37

&lt;211&gt; 111

• &lt;212&gt; PRT

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; artificial zinc finger protein

&lt;400&gt; 37

Tyr Glu Cys Glu Lys Cys Gly Lys Ala Phe Asn Gln Ser Ser Asn Leu  
 1 5 10 15

Thr Arg His Lys Lys Ser His Thr Gly Glu Lys Pro Tyr Lys Cys Met  
 20 25 30

Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln  
 35 40 45

Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Pro Asp Cys Gly Lys  
 50 55 60

Ser Phe Ser Gln Ser Ser Ser Leu Ile Arg His Gln Arg Thr His Thr  
 65 70 75 80

Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg  
 85 90 95

Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr Gly Glu Lys  
 100 105 110

&lt;210&gt; 38

&lt;211&gt; 111

&lt;212&gt; PRT

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; artificial zinc finger protein

&lt;400&gt; 38

Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu  
 1 5 10 15

Thr Thr His Lys Ile Ile His Thr Gly Glu Lys Pro Tyr Thr Cys Ser  
20 25 30

Asp Cys Gly Lys Ala Phe Arg Asp Lys Ser Cys Leu Asn Arg His Arg  
35 40 45

Arg Thr His Thr Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg  
50 55 60

Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Lys Cys Lys Gln Cys Gly Lys Ala Phe Gly Cys  
85 90 95

Pro Ser Asn Leu Arg Arg His Gly Arg Thr His Thr Gly Glu Lys  
100 105 110

<210> 39

<211> 111

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 39

Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu  
1 5 10 15

Thr Thr His Lys Ile Ile His Thr Gly Glu Lys Pro Tyr Arg Cys Glu  
20 25 30

Glu Cys Gly Lys Ala Phe Arg Trp Pro Ser Asn Leu Thr Arg His Lys  
35 40 45

Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys  
50 55 60

Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Arg Cys Glu Glu Cys Gly Lys Ala Phe Arg Trp  
85 90 95

Pro Ser Asn Leu Thr Arg His Lys Arg Ile His Thr Gly Glu Lys  
100 105 110

<210> 40  
 <211> 113  
 <212> PRT  
 <213> Artificial

<220>  
 <223> artificial zinc finger protein

<400> 40

Tyr Glu Cys Asp His Cys Gly Lys Ala Phe Ser Val Ser Ser Asn Leu  
 1 5 10 15

Asn Val His Arg Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Met  
 20 25 30

Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln  
 35 40 45

Arg Ile His Thr Gly Glu Lys Pro Tyr Val Cys Asp Val Glu Gly Cys  
 50 55 60

Thr Trp Lys Phe Ala Arg Ser Asp Glu Leu Asn Arg His Lys Lys Arg  
 65 70 75 80

His Thr Gly Glu Lys Pro Tyr Val Cys Ser Lys Cys Gly Lys Ala Phe  
 85 90 95

Thr Gln Ser Ser Asn Leu Thr Val His Gln Lys Ile His Thr Gly Glu  
 100 105 110

Lys

<210> 41  
 <211> 111  
 <212> PRT  
 <213> Artificial

<220>  
 <223> artificial zinc finger protein

<400> 41

Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser Arg Lys Ser Asn Leu  
 1 5 10 15

Ile Arg His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Met  
 20 25 30

Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln  
 35 40 45

Arg Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg  
 50 55 60

Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr  
 65 70 75 80

Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg  
 85 90 95

Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr Gly Glu Lys  
 100 105 110

<210> 42

<211> 111

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 42

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu  
 1 5 10 15

Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys  
 20 25 30

Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr  
 35 40 45

Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys  
 50 55 60

Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr  
 65 70 75 80

Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg  
 85 90 95

Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr Gly Glu Lys  
 100 105 110

<210> 43

<211> 111

<212> PRT  
 <213> Artificial

<220>  
 <223> artificial zinc finger protein

<400> 43

Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser Arg Lys Ser Asn Leu  
 1 5 10 15

Ile Arg His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Gly  
 20 25 30

Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu Thr Arg His Gln  
 35 40 45

Lys Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg  
 50 55 60

Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr  
 65 70 75 80

Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg  
 85 90 95

Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr Gly Glu Lys  
 100 105 110

<210> 44  
 <211> 113  
 <212> PRT  
 <213> Artificial

<220>  
 <223> artificial zinc finger protein

<400> 44

Tyr Val Cys Asp Val Glu Gly Cys Thr Trp Lys Phe Ala Arg Ser Asp  
 1 5 10 15

Glu Leu Asn Arg His Lys Lys Arg His Thr Gly Glu Lys Pro Tyr Lys  
 20 25 30

Cys Pro Asp Cys Gly Lys Ser Phe Ser Gln Ser Ser Ser Leu Ile Arg  
 35 40 45

His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Glu Glu Cys  
 50 55 60

Gly Lys Ala Phe Arg Gln Ser Ser His Leu Thr Thr His Lys Ile Ile  
 65 70 75 80

His Thr Gly Glu Lys Pro Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe  
 85 90 95

Ser Arg Lys Ser Asn Leu Ile Arg His Gln Arg Thr His Thr Gly Glu  
 100 105 110

Lys

<210> 45  
 <211> 111  
 <212> PRT  
 <213> Artificial

<220>  
 <223> artificial zinc finger protein

<400> 45

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu  
 1 5 10 15

Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys  
 20 25 30

Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr  
 35 40 45

Arg Thr His Thr Gly Glu Lys Pro Tyr Glu Cys Asp His Cys Gly Lys  
 50 55 60

Ala Phe Ser Val Ser Ser Asn Leu Asn Val His Arg Arg Ile His Thr  
 65 70 75 80

Gly Glu Lys Pro Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Arg Gln  
 85 90 95

Ser Ser His Leu Thr Thr His Lys Ile Ile His Thr Gly Glu Lys  
 100 105 110

<210> 46  
 <211> 111

<212> PRT  
 <213> Artificial

<220>  
 <223> artificial zinc finger protein

<400> 46

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu  
 1 5 10 15

Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Met  
 20 25 30

Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln  
 35 40 45

Arg Ile His Thr Gly Glu Lys Pro Tyr Arg Cys Glu Glu Cys Gly Lys  
 50 55 60

Ala Phe Arg Trp Pro Ser Asn Leu Thr Arg His Lys Arg Ile His Thr  
 65 70 75 80

Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg  
 85 90 95

Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr Gly Glu Lys  
 100 105 110

<210> 47  
 <211> 113  
 <212> PRT  
 <213> Artificial

<220>  
 <223> artificial zinc finger protein

<400> 47

Tyr Val Cys Asp Val Glu Gly Cys Thr Trp Lys Phe Ala Arg Ser Asp  
 1 5 10 15

Glu Leu Asn Arg His Lys Lys Arg His Thr Gly Glu Lys Pro Tyr Lys  
 20 25 30

Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg  
 35 40 45

His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Thr Cys Ser Asp Cys  
 50 55 60

Gly Lys Ala Phe Arg Asp Lys Ser Cys Leu Asn Arg His Arg Arg Thr  
 65 70 75 80

His Thr Gly Glu Lys Pro Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe  
 85 90 95

Arg Gln Ser Ser His Leu Thr Thr His Lys Ile Ile His Thr Gly Glu  
 100 105 110

Lys

<210> 48

<211> 111

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 48

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu  
 1 5 10 15

Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Glu Cys Asn  
 20 25 30

Tyr Cys Gly Lys Thr Phe Ser Val Ser Ser Thr Leu Ile Arg His Gln  
 35 40 45

Arg Ile His Thr Gly Glu Lys Pro Tyr Glu Cys Glu Lys Cys Gly Lys  
 50 55 60

Ala Phe Asn Gln Ser Ser Asn Leu Thr Arg His Lys Lys Ser His Thr  
 65 70 75 80

Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg  
 85 90 95

Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr Gly Glu Lys  
 100 105 110

<210> 49

<211> 113

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 49

Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu  
1 5 10 15

Thr Thr His Lys Ile Ile His Thr Gly Glu Lys Pro Tyr Ile Cys Arg  
20 25 30

Lys Cys Gly Arg Gly Phe Ser Arg Lys Ser Asn Leu Ile Arg His Gln  
35 40 45

Arg Thr His Thr Gly Glu Lys Pro Tyr Arg Cys Glu Glu Cys Gly Lys  
50 55 60

Ala Phe Arg Trp Pro Ser Asn Leu Thr Arg His Lys Arg Ile His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Val Cys Asp Val Glu Gly Cys Thr Trp Lys Phe  
85 90 95

Ala Arg Ser Asp Glu Leu Asn Arg His Lys Lys Arg His Thr Gly Glu  
100 105 110

Lys

<210> 50

<211> 113

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 50

Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu  
1 5 10 15

Thr Thr His Lys Ile Ile His Thr Gly Glu Lys Pro Tyr Arg Cys Glu  
20 25 30

Glu Cys Gly Lys Ala Phe Arg Trp Pro Ser Asn Leu Thr Arg His Lys  
35 40 45

Arg Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg  
 50 55 60

Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr  
 65 70 75 80

Gly Glu Lys Pro Tyr Val Cys Asp Val Glu Gly Cys Thr Trp Lys Phe  
 85 90 95

Ala Arg Ser Asp Glu Leu Asn Arg His Lys Lys Arg His Thr Gly Glu  
 100 105 110

Lys

<210> 51  
 <211> 111  
 <212> PRT  
 <213> Artificial

<220>  
 <223> artificial zinc finger protein

<400> 51

Tyr Thr Cys Lys Gln Cys Gly Lys Ala Phe Ser Val Ser Ser Ser Leu  
 1 5 10 15

Arg Arg His Glu Thr Thr His Thr Gly Glu Lys Pro Tyr Arg Cys Glu  
 20 25 30

Glu Cys Gly Lys Ala Phe Arg Trp Pro Ser Asn Leu Thr Arg His Lys  
 35 40 45

Arg Ile His Thr Gly Glu Lys Pro Tyr Ile Cys Arg Lys Cys Gly Arg  
 50 55 60

Gly Phe Ser Arg Lys Ser Asn Leu Ile Arg His Gln Arg Thr His Thr  
 65 70 75 80

Gly Glu Lys Pro Tyr Thr Cys Lys Gln Cys Gly Lys Ala Phe Ser Val  
 85 90 95

Ser Ser Ser Leu Arg Arg His Glu Thr Thr His Thr Gly Glu Lys  
 100 105 110

<210> 52  
 <211> 111

&lt;212&gt; PRT

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; artificial zinc finger protein

&lt;400&gt; 52

Tyr Lys Cys Gly Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu  
 1 5 10 15

Thr Arg His Gln Lys Ile His Thr Gly Glu Lys Pro Tyr Thr Cys Lys  
 20 25 30

Gln Cys Gly Lys Ala Phe Ser Val Ser Ser Ser Leu Arg Arg His Glu  
 35 40 45

Thr Thr His Thr Gly Glu Lys Pro Tyr Arg Cys Glu Glu Cys Gly Lys  
 50 55 60

Ala Phe Arg Trp Pro Ser Asn Leu Thr Arg His Lys Arg Ile His Thr  
 65 70 75 80

Gly Glu Lys Pro Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser Arg  
 85 90 95

Lys Ser Asn Leu Ile Arg His Gln Arg Thr His Thr Gly Glu Lys  
 100 105 110

&lt;210&gt; 53

&lt;211&gt; 113

&lt;212&gt; PRT

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; artificial zinc finger protein

&lt;400&gt; 53

Tyr Val Cys Asp Val Glu Gly Cys Thr Trp Lys Phe Ala Arg Ser Asp  
 1 5 10 15

Glu Leu Asn Arg His Lys Lys Arg His Thr Gly Glu Lys Pro Tyr Lys  
 20 25 30

Cys Gly Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu Thr Arg  
 35 40 45

His Gln Lys Ile His Thr Gly Glu Lys Pro Tyr Thr Cys Lys Gln Cys  
 50 55 60

Gly Lys Ala Phe Ser Val Ser Ser Ser Leu Arg Arg His Glu Thr Thr  
 65 70 75 80

His Thr Gly Glu Lys Pro Tyr Arg Cys Glu Glu Cys Gly Lys Ala Phe  
 85 90 95

Arg Trp Pro Ser Asn Leu Thr Arg His Lys Arg Ile His Thr Gly Glu  
 100 105 110

Lys

<210> 54  
 <211> 111  
 <212> PRT  
 <213> Artificial

<220>  
 <223> artificial zinc finger protein

<400> 54

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu  
 1 5 10 15

Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Gly  
 20 25 30

Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu Thr Arg His Gln  
 35 40 45

Lys Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys  
 50 55 60

Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr  
 65 70 75 80

Gly Glu Lys Pro Tyr Val Cys Ser Lys Cys Gly Lys Ala Phe Thr Gln  
 85 90 95

Ser Ser Asn Leu Thr Val His Gln Lys Ile His Thr Gly Glu Lys  
 100 105 110

<210> 55  
 <211> 111

&lt;212&gt; PRT

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; artificial zinc finger protein

&lt;400&gt; 55

Tyr Lys Cys Gly Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu  
 1 5 10 15

Thr Arg His Gln Lys Ile His Thr Gly Glu Lys Pro Tyr Ile Cys Arg  
 20 25 30

Lys Cys Gly Arg Gly Phe Ser Arg Lys Ser Asn Leu Ile Arg His Gln  
 35 40 45

Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Gly Gln Cys Gly Lys  
 50 55 60

Phe Tyr Ser Gln Val Ser His Leu Thr Arg His Gln Lys Ile His Thr  
 65 70 75 80

Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg  
 85 90 95

Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr Gly Glu Lys  
 100 105 110

&lt;210&gt; 56

&lt;211&gt; 111

&lt;212&gt; PRT

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; artificial zinc finger protein

&lt;400&gt; 56

Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu  
 1 5 10 15

Lys Thr His Thr Arg Thr His Thr Gly Glu Lys Pro Tyr Ile Cys Arg  
 20 25 30

Lys Cys Gly Arg Gly Phe Ser Arg Lys Ser Asn Leu Ile Arg His Gln  
 35 40 45

Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys  
 50 55 60

Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr  
 65 70 75 80

Gly Glu Lys Pro Tyr Arg Cys Glu Glu Cys Gly Lys Ala Phe Arg Trp  
 85 90 95

Pro Ser Asn Leu Thr Arg His Lys Arg Ile His Thr Gly Glu Lys  
 100 105 110

<210> 57

<211> 111

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 57

Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu  
 1 5 10 15

Lys Thr His Thr Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Met  
 20 25 30

Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln  
 35 40 45

Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Lys Gln Cys Gly Lys  
 50 55 60

Ala Phe Gly Cys Pro Ser Asn Leu Arg Arg His Gly Arg Thr His Thr  
 65 70 75 80

Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg  
 85 90 95

Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr Gly Glu Lys  
 100 105 110

<210> 58

<211> 111

<212> PRT

<213> Artificial

&lt;220&gt;

&lt;223&gt; artificial zinc finger protein

&lt;400&gt; 58

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu  
 1 5 10 15

Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Lys  
 20 25 30

Gln Cys Gly Lys Ala Phe Gly Cys Pro Ser Asn Leu Arg Arg His Gly  
 35 40 45

Arg Thr His Thr Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg  
 50 55 60

Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr  
 65 70 75 80

Gly Glu Lys Pro Tyr Lys Cys Lys Gln Cys Gly Lys Ala Phe Gly Cys  
 85 90 95

Pro Ser Asn Leu Arg Arg His Gly Arg Thr His Thr Gly Glu Lys  
 100 105 110

&lt;210&gt; 59

&lt;211&gt; 111

&lt;212&gt; PRT

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; artificial zinc finger protein

&lt;400&gt; 59

Tyr Lys Cys Pro Asp Cys Gly Lys Ser Phe Ser Gln Ser Ser Ser Leu  
 1 5 10 15

Ile Arg His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Gly  
 20 25 30

Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu Thr Arg His Gln  
 35 40 45

Lys Ile His Thr Gly Glu Lys Pro Tyr Ile Cys Arg Lys Cys Gly Arg  
 50 55 60

Gly Phe Ser Arg Lys Ser Asn Leu Ile Arg His Gln Arg Thr His Thr  
 65 70 75 80

Gly Glu Lys Pro Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser Arg  
 85 90 95

Lys Ser Asn Leu Ile Arg His Gln Arg Thr His Thr Gly Glu Lys  
 100 105 110

<210> 60

<211> 111

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 60

Tyr Glu Cys Asn Tyr Cys Gly Lys Thr Phe Ser Val Ser Ser Thr Leu  
 1 5 10 15

Ile Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Glu  
 20 25 30

Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu Thr Thr His Lys  
 35 40 45

Ile Ile His Thr Gly Glu Lys Pro Tyr Arg Cys Glu Glu Cys Gly Lys  
 50 55 60

Ala Phe Arg Trp Pro Ser Asn Leu Thr Arg His Lys Arg Ile His Thr  
 65 70 75 80

Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg  
 85 90 95

Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr Gly Glu Lys  
 100 105 110

<210> 61

<211> 111

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

&lt;400&gt; 61

Tyr Glu Cys Asn Tyr Cys Gly Lys Thr Phe Ser Val Ser Ser Thr Leu  
 1 5 10 15

Ile Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Glu Cys Glu  
 20 25 30

Lys Cys Gly Lys Ala Phe Asn Gln Ser Ser Asn Leu Thr Arg His Lys  
 35 40 45

Lys Ser His Thr Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys  
 50 55 60

Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr  
 65 70 75 80

Gly Glu Lys Pro Tyr Glu Cys Glu Lys Cys Gly Lys Ala Phe Asn Gln  
 85 90 95

Ser Ser Asn Leu Thr Arg His Lys Lys Ser His Thr Gly Glu Lys  
 100 105 110

&lt;210&gt; 62

&lt;211&gt; 111

&lt;212&gt; PRT

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; artificial zinc finger protein

&lt;400&gt; 62

Tyr Glu Cys Glu Lys Cys Gly Lys Ala Phe Asn Gln Ser Ser Asn Leu  
 1 5 10 15

Thr Arg His Lys Lys Ser His Thr Gly Glu Lys Pro Tyr Lys Cys Met  
 20 25 30

Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln  
 35 40 45

Arg Ile His Thr Gly Glu Lys Pro Tyr Glu Cys Glu Lys Cys Gly Lys  
 50 55 60

Ala Phe Asn Gln Ser Ser Asn Leu Thr Arg His Lys Lys Ser His Thr  
 65 70 75 80

Gly Glu Lys Pro Tyr Glu Cys Asp His Cys Gly Lys Ala Phe Ser Val  
                             85                            90                            95

Ser Ser Asn Leu Asn Val His Arg Arg Ile His Thr Gly Glu Lys  
                             100                            105                            110

<210> 63

<211> 113

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 63

Tyr Thr Cys Ser Asp Cys Gly Lys Ala Phe Arg Asp Lys Ser Cys Leu  
   1                            5                            10                            15

Asn Arg His Arg Arg Thr His Thr Gly Glu Lys Pro Phe Gln Cys Lys  
                             20                            25                            30

Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr  
                             35                            40                            45

Arg Thr His Thr Gly Glu Lys Pro Tyr Glu Cys Asn Tyr Cys Gly Lys  
   50                            55                            60

Thr Phe Ser Val Ser Ser Thr Leu Ile Arg His Gln Arg Ile His Thr  
  65                            70                            75                            80

Gly Glu Lys Pro Tyr Val Cys Asp Val Glu Gly Cys Thr Trp Lys Phe  
                             85                            90                            95

Ala Arg Ser Asp Glu Leu Asn Arg His Lys Lys Arg His Thr Gly Glu  
                             100                            105                            110

Lys

<210> 64

<211> 111

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

&lt;400&gt; 64

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu  
 1 5 10 15  
 Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Thr Cys Ser  
 20 25 30  
 Asp Cys Gly Lys Ala Phe Arg Asp Lys Ser Cys Leu Asn Arg His Arg  
 35 40 45  
 Arg Thr His Thr Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg  
 50 55 60  
 Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr  
 65 70 75 80  
 Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg  
 85 90 95  
 Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr Gly Glu Lys  
 100 105 110

&lt;210&gt; 65

&lt;211&gt; 111

&lt;212&gt; PRT

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; artificial zinc finger protein

&lt;400&gt; 65

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu  
 1 5 10 15  
 Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Met  
 20 25 30  
 Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln  
 35 40 45  
 Arg Ile His Thr Gly Glu Lys Pro Tyr Val Cys Ser Lys Cys Gly Lys  
 50 55 60  
 Ala Phe Thr Gln Ser Ser Asn Leu Thr Val His Gln Lys Ile His Thr  
 65 70 75 80

Gly Glu Lys Pro Tyr Val Cys Ser Lys Cys Gly Lys Ala Phe Thr Gln  
                             85                            90                            95

Ser Ser Asn Leu Thr Val His Gln Lys Ile His Thr Gly Glu Lys  
                             100                            105                            110

<210> 66  
 <211> 113  
 <212> PRT  
 <213> Artificial

<220>  
 <223> artificial zinc finger protein

<400> 66

Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu  
 1                            5                            10                            15

Lys Thr His Thr Arg Thr His Thr Gly Glu Lys Pro Tyr Thr Cys Lys  
                             20                            25                            30

Gln Cys Gly Lys Ala Phe Ser Val Ser Ser Ser Leu Arg Arg His Glu  
                             35                            40                            45

Thr Thr His Thr Gly Glu Lys Pro Tyr Val Cys Asp Val Glu Gly Cys  
                             50                            55                            60

Thr Trp Lys Phe Ala Arg Ser Asp Glu Leu Asn Arg His Lys Lys Arg  
 65                            70                            75                            80

His Thr Gly Glu Lys Pro Tyr Lys Cys Pro Asp Cys Gly Lys Ser Phe  
                             85                            90                            95

Ser Gln Ser Ser Ser Leu Ile Arg His Gln Arg Thr His Thr Gly Glu  
                             100                            105                            110

Lys

<210> 67  
 <211> 111  
 <212> PRT  
 <213> Artificial

<220>  
 <223> artificial zinc finger protein

&lt;400&gt; 67

Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser Arg Lys Ser Asn Leu  
 1 5 10 15

Ile Arg His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Pro  
 20 25 30

Asp Cys Gly Lys Ser Phe Ser Gln Ser Ser Ser Leu Ile Arg His Gln  
 35 40 45

Arg Thr His Thr Gly Glu Lys Pro Tyr Glu Cys Glu Lys Cys Gly Lys  
 50 55 60

Ala Phe Asn Gln Ser Ser Asn Leu Thr Arg His Lys Lys Ser His Thr  
 65 70 75 80

Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg  
 85 90 95

Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr Gly Glu Lys  
 100 105 110

&lt;210&gt; 68

&lt;211&gt; 111

&lt;212&gt; PRT

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; artificial zinc finger protein

&lt;400&gt; 68

Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser Arg Lys Ser Asn Leu  
 1 5 10 15

Ile Arg His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Ser Cys Gly  
 20 25 30

Ile Cys Gly Lys Ser Phe Ser Asp Ser Ser Ala Lys Arg Arg His Cys  
 35 40 45

Ile Leu His Thr Gly Glu Lys Pro Tyr Glu Cys Glu Lys Cys Gly Lys  
 50 55 60

Ala Phe Asn Gln Ser Ser Asn Leu Thr Arg His Lys Lys Ser His Thr  
 65 70 75 80

Gly Glu Lys Pro Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Arg Gln  
                             85                            90                            95

Ser Ser His Leu Thr Thr His Lys Ile Ile His Thr Gly Glu Lys  
                             100                            105                            110

<210> 69

<211> 111

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 69

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu  
   1                            5                            10                            15

Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Lys  
                             20                            25                            30

Gln Cys Gly Lys Ala Phe Gly Cys Pro Ser Asn Leu Arg Arg His Gly  
                             35                            40                            45

Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Glu Glu Cys Gly Lys  
                             50                            55                            60

Ala Phe Arg Gln Ser Ser His Leu Thr Thr His Lys Ile Ile His Thr  
   65                            70                            75                            80

Gly Glu Lys Pro Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser Arg  
                             85                            90                            95

Lys Ser Asn Leu Ile Arg His Gln Arg Thr His Thr Gly Glu Lys  
                             100                            105                            110

<210> 70

<211> 111

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 70

Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser Arg Lys Ser Asn Leu  
 1 5 10 15  
 Ile Arg His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Glu  
 20 25 30  
 Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu Thr Thr His Lys  
 35 40 45  
 Ile Ile His Thr Gly Glu Lys Pro Tyr Ser Cys Gly Ile Cys Gly Lys  
 50 55 60  
 Ser Phe Ser Asp Ser Ser Ala Lys Arg Arg His Cys Ile Leu His Thr  
 65 70 75 80  
 Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg  
 85 90 95  
 Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr Gly Glu Lys  
 100 105 110

<210> 71  
 <211> 113  
 <212> PRT  
 <213> Artificial

<220>  
 <223> artificial zinc finger protein

<400> 71

Tyr Lys Cys Gly Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu  
 1 5 10 15  
 Thr Arg His Gln Lys Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Met  
 20 25 30  
 Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln  
 35 40 45  
 Arg Ile His Thr Gly Glu Lys Pro Tyr Val Cys Asp Val Glu Gly Cys  
 50 55 60  
 Thr Trp Lys Phe Ala Arg Ser Asp Glu Leu Asn Arg His Lys Lys Arg  
 65 70 75 80  
 His Thr Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe  
 85 90 95

Asn Arg Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr Gly Glu  
 100 105 110

Lys

<210> 72  
 <211> 96  
 <212> PRT  
 <213> Homo sapiens

<400> 72

Asp Ala Lys Ser Leu Thr Ala Trp Ser Arg Thr Leu Val Thr Phe Lys  
 1 5 10 15

Asp Val Phe Val Asp Phe Thr Arg Glu Glu Trp Lys Leu Leu Asp Thr  
 20 25 30

Ala Gln Gln Ile Val Tyr Arg Asn Val Met Leu Glu Asn Tyr Lys Asn  
 35 40 45

Leu Val Ser Leu Gly Tyr Gln Leu Thr Lys Pro Asp Val Ile Leu Arg  
 50 55 60

Leu Glu Lys Gly Glu Glu Pro Trp Leu Val Glu Arg Glu Ile His Gln  
 65 70 75 80

Glu Thr His Pro Asp Ser Glu Thr Ala Phe Glu Ile Lys Ser Ser Val  
 85 90 95

<210> 73  
 <211> 260  
 <212> PRT  
 <213> Homo sapiens

<400> 73

Tyr Leu Pro Asp Thr Asp Asp Arg His Arg Ile Glu Glu Lys Arg Lys  
 1 5 10 15

Arg Thr Tyr Glu Thr Phe Lys Ser Ile Met Lys Lys Ser Pro Phe Ser  
 20 25 30

Gly Pro Thr Asp Pro Arg Pro Pro Pro Arg Arg Ile Ala Val Pro Ser  
 35 40 45

Arg Ser Ser Ala Ser Val Pro Lys Pro Ala Pro Gln Pro Tyr Pro Phe  
 50 55 60  
 Thr Ser Ser Leu Ser Thr Ile Asn Tyr Asp Glu Phe Pro Thr Met Val  
 65 70 75 80  
 Phe Pro Ser Gly Gln Ile Ser Gln Ala Ser Ala Leu Ala Pro Ala Pro  
 85 90 95  
 Pro Gln Val Leu Pro Gln Ala Pro Ala Pro Ala Pro Ala Met  
 100 105 110  
 Val Ser Ala Leu Ala Gln Ala Pro Ala Pro Val Pro Val Leu Ala Pro  
 115 120 125  
 Gly Pro Pro Gln Ala Val Ala Pro Pro Ala Pro Lys Pro Thr Gln Ala  
 130 135 140  
 Gly Glu Gly Thr Leu Ser Glu Ala Leu Leu Gln Leu Gln Phe Asp Asp  
 145 150 155 160  
 Glu Asp Leu Gly Ala Leu Leu Gly Asn Ser Thr Asp Pro Ala Val Phe  
 165 170 175  
 Thr Asp Leu Ala Ser Val Asp Asn Ser Glu Phe Gln Gln Leu Leu Asn  
 180 185 190  
 Gln Gly Ile Pro Val Ala Pro His Thr Thr Glu Pro Met Leu Met Glu  
 195 200 205  
 Tyr Pro Glu Ala Ile Thr Arg Leu Val Thr Ala Gln Arg Pro Pro Asp  
 210 215 220  
 Pro Ala Pro Ala Pro Leu Gly Ala Pro Gly Leu Pro Asn Gly Leu Leu  
 225 230 235 240  
 Ser Gly Asp Glu Asp Phe Ser Ser Ile Ala Asp Met Asp Phe Ser Ala  
 245 250 255  
 Leu Leu Ser Gln  
 260

<210> 74  
 <211> 127  
 <212> PRT  
 <213> *Sacharromyces cerevisiae*  
 <400> 74

Asn Phe Asn Gln Ser Gly Asn Ile Ala Asp Ser Ser Leu Ser Phe Thr  
1 5 10 15

Phe Thr Asn Ser Ser Asn Gly Pro Asn Leu Ile Thr Thr Gln Thr Asn  
20 25 30

Ser Gln Ala Leu Ser Gln Pro Ile Ala Ser Ser Asn Val His Asp Asn  
35 40 45

Phe Met Asn Asn Glu Ile Thr Ala Ser Lys Ile Asp Asp Gly Asn Asn  
50 55 60

Ser Lys Pro Leu Ser Pro Gly Trp Thr Asp Gln Thr Ala Tyr Asn Ala  
65 70 75 80

Phe Gly Ile Thr Thr Gly Met Phe Asn Thr Thr Thr Met Asp Asp Val  
85 90 95

Tyr Asn Tyr Leu Phe Asp Asp Glu Asp Thr Pro Pro Asn Pro Lys Lys  
100 105 110

Glu Ile Ser Met Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Ser  
115 120 125

<210> 75

<211> 63

<212> PRT

<213> Homo sapiens

<400> 75

Val Ser Val Thr Phe Glu Asp Val Ala Val Leu Phe Thr Arg Asp Glu  
1 5 10 15

Trp Lys Lys Leu Asp Leu Ser Gln Arg Ser Leu Tyr Arg Glu Val Met  
20 25 30

Leu Glu Asn Tyr Ser Asn Leu Ala Ser Met Ala Gly Phe Leu Phe Thr  
35 40 45

Lys Pro Lys Val Ile Ser Leu Leu Gln Gln Gly Glu Asp Pro Trp  
50 55 60

<210> 76

<211> 12

<212> DNA

<213> Homo sapiens

<400> 76  
gtttgggagg tc

12

<210> 77  
<211> 12  
<212> DNA  
<213> Homo sapiens

<400> 77  
tgggaggtca ga

12

<210> 78  
<211> 12  
<212> DNA  
<213> Homo sapiens

<400> 78  
gtcagaaata gg

12

<210> 79  
<211> 12  
<212> DNA  
<213> Homo sapiens

<400> 79  
gccagagccg gg

12

<210> 80  
<211> 12  
<212> DNA  
<213> Homo sapiens

<400> 80  
gagcggggag aa

12

<210> 81  
<211> 12  
<212> DNA  
<213> Homo sapiens

<400> 81  
ggggagaggg ac

12

<210> 82

<211> 12  
<212> DNA  
<213> Homo sapiens

<400> 82  
gtggggagag gg

12

<210> 83  
<211> 12  
<212> DNA  
<213> Homo sapiens

<400> 83  
ggggcagggg aa

12

<210> 84  
<211> 12  
<212> DNA  
<213> Homo sapiens

<400> 84  
gacagggcct ga

12

<210> 85  
<211> 12  
<212> DNA  
<213> Homo sapiens

<400> 85  
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His	Xaa	Xaa	Xaa	His
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<220>  
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<220>  
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 <223> between 1 and 3 residues of any amino acid

<400> 124

Cys	Xaa	Xaa	Cys	Xaa	Xaa	Xaa	Xaa	Xaa	Arg	Xaa	Asp	Glu	Xaa	Xaa	Arg
1			5						10						15

His Xaa Xaa Xaa His  
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<223> Glu or Gln

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<223> Arg or Lys

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<222> (6)..(6)

<223> Tyr or Phe

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Lys Lys Arg Lys Val Gly Ile Arg Ile Pro Gly Glu Lys Pro  
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<210> 129  
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<400> 129

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 20 25 30

Pro Phe Gln Cys Arg Ile Cys Met Arg Asn Phe Ser Arg Ser Asp His  
 35 40 45

Leu Thr Thr His Ile Arg Thr His Thr Gly Glu Lys Pro Phe Ala Cys  
 50 55 60

Asp Ile Cys Gly Arg Lys Phe Ala Arg Ser Asp Glu Arg Lys Arg His  
 65 70 75 80

Thr Lys Ile His Leu Arg Gln Lys Asp  
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